

Lexan* Resin HPH4504H

Americas: COMMERCIAL

High heat specialty polycarbonate with enhanced autoclavability. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO10993 of USP Class VI). EtO, steam, gamma and e-beam sterilizable.

Property

TYPICAL PROPERTIES ⁽¹⁾			
MECHANICAL	Value	Unit	Standard
Tensile Stress, yld, Type I, 50 mm/min	65	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	71	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	7	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	122	%	ASTM D 638
Tensile Modulus, 5 mm/min	2090	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	95	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2020	MPa	ASTM D 790
Hardness, Rockwell M	85	-	ASTM D 785
Hardness, Rockwell R	122	-	ASTM D 785
Tensile Stress, yield, 5 mm/min	65	MPa	ISO 527
Tensile Stress, yield, 50 mm/min	65	MPa	ISO 527
Tensile Stress, break, 50 mm/min	65	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	7	%	ISO 527
Tensile Strain, break, 50 mm/min	7	%	ISO 527
Tensile Modulus, 1 mm/min	2260	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	66	MPa	ISO 178
Flexural Modulus, 2 mm/min	2120	MPa	ISO 178
IMPACT	Value	Unit	Standard
Izod Impact, unnotched, 23°C	3204	J/m	ASTM D 4812
Izod Impact, notched, 23°C	640	J/m	ASTM D 256
Izod Impact, notched, -30°C	144	J/m	ASTM D 256
Tensile Impact, Type "S"	577	kJ/m ²	ASTM D 1822
Falling Dart Impact (D 3029), 23°C	149	J	ASTM D 3029
Instrumented Impact Total Energy, 23°C	73	J	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	13	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	11	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	15	kJ/m ²	ISO 179/1eA
THERMAL	Value	Unit	Standard
Vicat Softening Temp, Rate B/50	160	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	143	°C	ASTM D 648
CTE, -40°C to 40°C, flow	6.E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	6.E-05	1/°C	ASTM E 831
CTE, -40°C to 95°C, flow	9.18E-05	1/°C	ASTM E 831
Specific Heat	1.25	J/g-°C	ASTM C 351
Thermal Conductivity	0.21	W/m-°C	ASTM C 177
CTE, -40°C to 40°C, flow	6.E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	6.E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	154	°C	ISO 306

Vicat Softening Temp, Rate B/120	155	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	132	°C	ISO 75/Af
Relative Temp Index, Elec	125	°C	UL 746B
Relative Temp Index, Mech w/impact	125	°C	UL 746B
Relative Temp Index, Mech w/o impact	125	°C	UL 746B
PHYSICAL	Value	Unit	Standard
Specific Gravity	1.2	-	ASTM D 792
Specific Volume	0.83	cm ³ /g	ASTM D 792
Density	1.19	g/cm ³	ASTM D 792
Water Absorption, 24 hours	0.16	%	ASTM D 570
Mold Shrinkage, flow, 3.2 mm	0.7 - 0.8	%	SABIC Method
Melt Flow Rate, 300°C/1.2 kgf	3	g/10 min	ASTM D 1238
Density	1.2	g/cm ³	ISO 1183
Water Absorption, (23°C/sat)	0.16	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.35	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	3	cm ³ /10 min	ISO 1133
OPTICAL	Value	Unit	Standard
Light Transmission	85	%	ASTM D 1003
Haze	1	%	ASTM D 1003
Refractive Index	1.6	-	ASTM D 542
ELECTRICAL	Value	Unit	Standard
Volume Resistivity	>2.6E+17	Ohm-cm	ASTM D 257
Dielectric Strength, in air, 3.2 mm	20.2	kV/mm	ASTM D 149
Relative Permittivity, 50/60 Hz	3.15	-	ASTM D 150
Relative Permittivity, 1 MHz	3	-	ASTM D 150
Dissipation Factor, 50/60 Hz	0.0012	-	ASTM D 150
Dissipation Factor, 100 Hz	0.024	-	ASTM D 150
Hot Wire Ignition {PLC}	2	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	3	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	4	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	3	PLC Code	UL 746A
FLAME CHARACTERISTICS	Value	Unit	Standard
UL Recognized, 94V-2 Flame Class Rating (3)	1.47	mm	UL 94

Source GMD, last updated:09/02/2008

Processing

Parameter	Value	Unit
Injection Molding		
Drying Temperature	120	°C
Drying Time	3 - 4	hrs
Drying Time (Cumulative)	48	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	340 - 360	°C
Nozzle Temperature	330 - 355	°C
Front - Zone 3 Temperature	340 - 360	°C
Middle - Zone 2 Temperature	325 - 350	°C
Rear - Zone 1 Temperature	315 - 340	°C
Mold Temperature	80 - 115	°C
Back Pressure	0.3 - 0.7	MPa
Screw Speed	40 - 70	rpm
Shot to Cylinder Size	40 - 60	%
Vent Depth	0.025 - 0.076	mm

Source GMD, last updated:09/02/2008

THESE PROPERTY VALUES ARE NOT INTENDED FOR SPECIFICATION PURPOSES.

PLEASE CHECK WITH YOUR [\(LOCAL SALES OFFICE\)](#) FOR AVAILABILITY IN YOUR REGION

(1) Typical values only. Variations within normal tolerances are possible for various colors. All values are measured after at least 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume and melt flow rates, are measured on injection molded samples. All samples tested under ISO test standards are prepared according to ISO 294.

(2) Only typical data for selection purposes. Not to be used for part or tool design.

(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

(4) Internal measurements according to UL standards.

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